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Pharmacokinetics of Paromomycin (Aminosidine) in Healthy Volunteers and Kala-azar Patients

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Key words: Paromomycin, pharmacokinetics, kala-azar

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Abstract

The objective of this work is to study the pharmacokinetics of Paromomycin (PM) in kala-azar patients and healthy volunteers. The pharmacokinetics of Paromomycin was studied in patients receiving intramuscular Paromomycin (15 mg/kg, daily for 28 days or 20 mg/kg daily for 21 days). Serial plasma samples were collected on day1 and day 26 (15 mg/kg regimen) or D 1 and D14 (20 mg/kg regimen) at various times up to 24 hours after the first dose for that day. 24 hours urine samples were also collected. Healthy volunteers received a single, intramuscular dose of Paromomycin (15 mg/kg). Serial plasma samples were collected at various times up to 24 hours, and 24 hour urine samples were also collected.

Paromomycin was assayed using High Performance Liquid Chromatographic (HPLC) method.

The results indicated that mean Paromomycin concentrations in plasma were significantly lower in patients compared to volunteers at all times post drug

administration. In addition, Paromomycin was undetectable in plasma from patients 8 hours after administration of both the 15 mg/kg and 20 mg/kg doses (there was no accumulation of Paromomycin in the body on multiple dosing). There was no significant difference between mean plasma drug concentrations following the 15 mg/kg dose compared to the 20 mg/kg dose in patients.